NCDENR

North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

November 14, 2008

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CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Tom Miller
Solid Waste Director
Solid Waste Department
2949 Hodges Farm Road
Kinston, North Carolina 28501

Re: Petition to Return to Detection Monitoring
Lenoir County Sanitary Landfill
Construction and Demolition Landfill Permit 54-03

Dear Mr. Miller:

The Solid Waste Section (SWS) does not approve a return to detection monitoring for groundwater contamination described in the *Assessment of Corrective Measures prepared for Lenoir County Landfill* (ACM), dated August 2007. A variety of remedies for the contamination are described in the ACM—monitored natural attenuation, phytoremediation, etc. However, in lieu of a selected remedy and subsequent corrective action plan (CAP), Lenoir County submitted the *Petition to Return to Detection Monitoring*. Presented in the petition is a request to end assessment monitoring also described in the ACM. Assessment monitoring had been required pursuant to 15A NCAC 13B .1634. The CAP is required pursuant 15A NCAC 13B .0547(4)(c), effective July 1, 2008.

The SWS reviewed the *Petition to Return to Detection Monitoring*, dated June 11, 2008. The petition comprised of a letter, tables, and graphs prepared and submitted by Municipal Engineering Services Company, P.A. (MESCO). Premise of the petition is reported compliance with 15A NCAC 13B .1634(e), reported statistical insignificance of cobalt; and reported "factors derived from" the ACM. The SWS also re-examined data in the ACM, reviewed laboratory data for January 2008, and consulted state and federal reports of groundwater conditions during assessment monitoring. What follows in this letter are the SWS's findings, corresponding to the three points in the petition, and the SWS's determinations regarding corrective action measures.

One, the Lenoir County Sanitary Landfill is not fully compliant with 15A NCAC 13B .1634. MESCO addressed detection of cobalt instead of constituents of concern (COC's) listed in the ACM—mercury and 1,1 dichloroethane. Cobalt is reportedly "statistically significant" in the ACM. A second statistical calculation confirmed that finding after sampling in January 2008. Cobalt concentration is also shown in January 2008 to be above background and the Solid Waste Section Limit (SWSL) for groundwater protection. Because cobalt detection alone is "a statistically significant increase over background", the Lenoir County Sanitary Landfill would not be compliant with 15A NCAC 13B .1634

(a) if assessment monitoring ended. Nonetheless, unaddressed in the petition are the originally targeted COC's—mercury and 1,1 dichloroethane.

Two, intrawell analysis did not show compliance with 15A NCAC 13B .1634 (e). To explain detection of cobalt, MESCO used "interwell analysis" and "intrawell analysis". Interwell analysis used sampling results from all wells; intrawell analysis, sampling results of one well in question—MW-9. Using intrawell analysis, cobalt is reportedly *not* statistically significant, contrary to prior findings. However, intrawell analysis is inappropriate for a well that is already contaminated, and a graph MESCO provided to show statistical data from the analysis verifies its misapplication. Depicted on the graph are anomalous groundwater conditions that adversely affected detection, not existence, of cobalt. The groundwater conditions are the statewide 1998-2002 drought and local 2007-2008 drought in Lenoir County. Intrawell analysis shows exceeded groundwater protection limits during normal groundwater conditions between droughts. It also shows a trend of increasing concentration in 2007, similar to a trend for mercury concentrations in MW-12 that also characteristically increased after the 1998-2002 drought. Furthermore, in July 2007, mercury detection culminates in the exceeded groundwater quality standard specified in 15A NCAC 2L .0202(g)(91). Because of the history and trend of cobalt and mercury detection, Lenoir County did not meet the condition specified in 15A NCAC 13B .1634 (e).

Three, "factors derived from" the ACM is unclear. There are some "factors" in the concluding section of the ACM that "influence selection of remediation alternatives" listed in a table. However, as mentioned before, there had been no selection. Hence, unexplained is exactly what is "derived" or how "factors" for remediation relate to the request presented in the petition.

The SWS concluded its review with four determinations. One, statistically significant cobalt concentration above the SWSL and background in MW-9 shows groundwater contamination beyond the relevant point of compliance. Two, increased mercury concentration coincides with normalized groundwater conditions following the 1998-2002 drought and exceeds the state groundwater quality standard. Three, past sampling results for 1,1 dichloroethane appear more indicative of drought than lack of contamination. Finally, unlike mercury and 1,1-dichloroethane, cobalt is not listed as a COC. Therefore, it should be included as an additional COC addressed by correction action(s) specified in 15A NCAC 13B .1636 and .1637, which are referenced in the new C &D Rule 15A NCAC 13B .0547(4)(c) effective July 1, 2008. Instead of returning to detection monitoring, the Lenoir County Sanitary Landfill is required to submit selection of remedy letter and a corrective action plan addressing the aforementioned issues within 30 days of the receipt of this letter.

If you have any questions, I can be reached at 919-508-8401.

Sincerely,

Zinith Barbee

Zinith Barbee
Hydrogeologist
Solid Waste Section

cc: Mark Poindexter — Solid Waste Section Field Operations Supervisor
Dennis Shackelford — Eastern Regional Supervisor
Ben Barnes — Waste Management Specialist
Sean Patrick — Municipal Engineering Services Co., P.A.
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